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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/728,624 | 11/30/2000 | Michael K. Eneboe | K35A0689 | 5458 |

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EXAMINER

JUNTIMA, NITTAYA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2663 | |

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/728,624

Applicant(s)

ENEBOE ET AL.

Examiner

Nittaya Juntima

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - on page 1, lines 4-13, the U.S. patent application number is missing and the status of the co-pending patent applications, if available, should be updated.

Appropriate correction is required.

Claim Objections

2. Claims 8 and 17 are objected to because of the following informalities:
 - in claim 8, line 1, "isochronous" should be added after "the,"
line 3, "ID" should be spelled out as "identification;" and
 - in claim 17, line 3, "ID" should be spelled out as "identification" and "DNN" should be spelled out as "dimension node number"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 4-5 and 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4, line 9 and claim 14, line 10, the limitation "the initialization packets" lacks antecedent basis.

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. **Claim 1, 11, and 19** are rejected under 35 U.S.C. 102(e) as being anticipated by Hahne et al. (USPN 6,538,416 B1).

Regarding **claim 1**, as shown in Fig. 1, Hahne et al. disclose the following:

(a) *a network (10), a plurality of interconnected switched nodes* (e.g. routers S1, R1, R3, R4, R5, and S3) forming multiple dimensions (not defined, reads on BR_Hops S1-R1, R1-R3, R3-R4, R4-R5, R5-S3), *an upstream port with an input port and an output port* (an upstream port is not defined, therefore reads on an inherent upstream port with an input port and an output port on each of the routers S1, R1, R3, R4, R5, and S3 which receives the traffic from and transmit the traffic to a router on its left, e.g. an upstream port of router R1 would receive a PROBE message 12 from router S1 and transmit a GRAFT message 16 to router S1), *a downstream port with an input port and an output port* (a downstream port is not defined,

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therefore reads on an inherent port with an input port and an output port on each of the routers S1, R1, R3, R4, R5, and S3 which receives the traffic from and transmit the traffic to a router on its right, e.g. a downstream port of router R1 would receive a GRAFT message 16 from router R3 and transmit a PROBE message 12 to router R3) (col. 3, lines 33-49, 57-58, 65-67, col. 4, lines 6-11, col. 6, lines 36-43, and col. 7, lines 3-7);

(b) *a discovery facility for discovering a depth* (not defined, reads on number of BR_Hops from a source to a sink) *of each dimension and for discovering resources within each switched node* (an inherent discovery facility in a source router, e.g. S1, which generates a PROBE message used for discovering a reservation path, i.e. BR_Hops and a number of hop counts from a source to a sink, within the network and for discovering resources, i.e. required bandwidth, within each of the routers S1, R1, R3, R4, R5, and S3) (col. 4, lines 40-45, 54-67, and col. 6, lines 32-col. 7, lines 1-2);

(c) *an addressing facility for assigning a matrix address to each switched node* (an addressing facility is inherently included to assign router identification, e.g. IP address, to each of the routers S1, R1, R3, R4, R5, and S3, col. 6, lines 15-19);

(d) *a resource reservation facility for reserving resources to establish a path through the network for transmitting an isochronous data stream* (a resource reservation facility must be inherently included in a sink router S3 for generating a GRAFT message used for reserving resources, i.e. required bandwidth, in each of the routers S1, R1, R3, R4, R5, and S3 for transmitting time-sensitive applications such as multimedia-on-demand, col. 4, lines 45-46, col. 5, lines 4-15, col. 7, lines 3-7, 27-36, and col. 1, lines 17-21);

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(e) a scheduling facility (the link scheduler) for scheduling isochronous data transmitted through the switched fabric network (col. 5, lines 33-44 and col. 1, lines 17-21).

Claim 11 is a method claim corresponding to a network claim 1, therefore is rejected under the same reason set forth in the rejection of claim 1.

Per **claim 19**, Hahne et al. teach *the step of leasing idle resources within a first switched node to a second switched node* (the step of leasing idle resources must be inherently included to allow router R5 to lease the idle bandwidth connected to router R5 within router S3 in order to enable the upstream router to reserve the specified amount of bandwidth on the communication link between the two routers when a GRAFT message travels along the path from the sink router back to the source router, col. 5, lines 4-15, see also col. 3, lines 57-58, 65-67).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2-3, 6-7, 10, 12-13, and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hahne et al. (USPN 6,538,416 B1).

Per **claims 2-3, and 12-13**, Hahne et al. teach an inherent *discovery facility* in a source router, e.g. S1, which generates a PROBE message as explained in claim 1 above (col. 4, lines 40-45, 54-67, and col. 6, lines 32-col. 7, lines 1-2, see also col. 3, lines 57-58), but fail to teach

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that the discovery facility comprises a central processor and the central processor is attached to one of the switched nodes.

However, it is well known in the art that a central processor such as a CPU is used for executing instructions and processing information/data. Therefore, it would have been obvious to one skilled in the art to include a central processor, e.g. a CPU, into a discovery facility in a router S1 of Hahne et al. to enable the discovery facility of router S1 to automatically execute its instructions and process the information/data without human intervention.

Per **claims 6-7, and 16**, Hahne et al. teach an inherent *discovery facility* in a source router, e.g. S1, which generates a PROBE message as explained in claim 1 above (col. 4, lines 40-45, 54-67, and col. 6, lines 32-col. 7, lines 1-2, see also col. 3, lines 57-58), but fail to teach that the discovery facility is distributed throughout the switched nodes and the discovery facility comprises a plurality of processors attached to the switched nodes.

It would have been obvious to one skilled in the art to distribute the discovery facility in the other switched nodes such as a router S3 to enable the router S3 to also use the discovery facility to generate a PROBE message for discovering a path and resources within the network 10 in a case when S3 becomes a source router.

Moreover, it is well known in the art that a central processor such as a CPU is used for executing instructions and processing information/data. Therefore, it would have been obvious to one skilled in the art to include a central processor, e.g. a CPU, into a discovery facility in routers S1 and S3 of Hahne et al. to enable the discovery facility of routers S1 and S3 to automatically execute its instructions and process the information/data without human intervention.

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Per **claim 10**, Hahne et al. teach the inherent resource reservation facility in a sink router, e.g. S3 for generating a GRAFT message used for reserving resources, i.e. required bandwidth, in each of the routers S1, R1, R3, R4, R5, and S3 for transmitting time-sensitive applications such as multimedia-on-demand, col. 4, lines 45-46, col. 5, lines 4-15, col. 7, lines 3-7, 27-36, and col. 1, lines 17-21), but fail to teach that the resource reservation facility is distributed throughout the switch nodes.

However, it would have been obvious to one skilled in the art to distribute the resource reservation facility in the other switched nodes such as a router S1 to enable the router S1 to also use the resource reservation facility to generate a GRAFT message for reserving bandwidth to establish a path through the network 10 in Fig. 1 for transmitting data in a case when S1 becomes a sink router.

Further, Hahn et al. teach that *each switched node comprises a leasing facility for leasing idle resources to other switched nodes* (a leasing facility must be inherently included in each of the routers S1, R1, R3, R4, R5, and S3 in Fig. 1 to lease the idle bandwidth to the upstream router in order to enable the upstream router to reserve the specified amount of bandwidth on the communication link between the two routers when a GRAFT message travels along the path from the sink router back to the source router, col. 5, lines 4-15, see also col. 3, lines 57-58, 65-67).

Allowable Subject Matter

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8. Claims 4-5 and 14-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 8-9 and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 703-306-4821. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima
March 4, 2004
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